

Microhollow Glow Discharge Instrument for In Situ Lunar Surface Measurements, Phase I

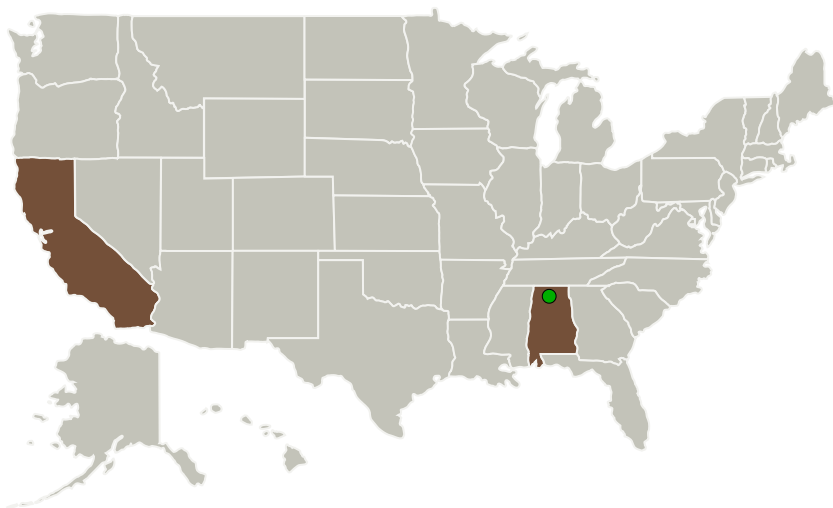
Completed Technology Project (2011 - 2011)




Project Introduction

Makel Engineering, Inc. (MEI) and Penn State University (PSU) propose to develop a highly sensitive spectrometer based on glow discharge plasma emission for the detection/classification of lunar soil components including minerals and adsorbed species (e.g. water). This is a broadly applicable technology for gases, aerosols, and solid samples and would complement technology that is already under development for detection of toxic species to monitor fire cleanup filtration systems on spacecraft.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Makel Engineering, Inc.	Lead Organization	Industry Small Disadvantaged Business (SDB)	Chico, California
 Marshall Space Flight Center (MSFC)	Supporting Organization	NASA Center	Huntsville, Alabama

Primary U.S. Work Locations

Alabama	California
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Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Project Transitions	2
Organizational Responsibility	2
Project Management	2
Technology Maturity (TRL)	3
Technology Areas	3
Target Destinations	3

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Project Transitions



February 2011: Project Start



September 2011: Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/138301>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Makel Engineering, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Benjamin Ward

Co-Investigator:

Benjamin Ward

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Technology Maturity (TRL)

Start: 2
Current: 4
Estimated End: 4



Technology Areas

Primary:

- TX07 Exploration Destination Systems
 - TX07.1 In-Situ Resource Utilization
 - TX07.1.1 Destination Reconnaissance and Resource Assessment

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System